



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

hr

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,630	01/25/2001	Hideo Miyake	1614.1116	5739
21171	7590	05/17/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			LI, AIMEE J	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/768,630	MIYAKE ET AL.
	Examiner	Art Unit
	Aimee J. Li	2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 February 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

1. Claims 1-5 have been considered.

### ***Papers Submitted***

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment as received on 16 February 2005 and Two-month Extension of Time as received on 16 February 2005.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being taught by Gottlieb, U.S. Patent Number 6,298,431 (herein referred to as Gottlieb).

5. Referring to claim 1, Gottlieb has taught a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising:

- a. Hardware resources divided into a plurality of areas, the hardware resources being used in common by the plurality of programs (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. An evacuation unit which records identification information identifying a first program, and evacuates information stored in an area of said plurality of areas if

the area is necessary for execution of a second program and is being used for execution of the first program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.

- c. A restoration unit which restores the evacuated information to the area based on the identification information when the second program comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

6. Referring to claim 2, Gottlieb has taught an interruption unit which brings about interruption processing if the area is necessary for execution of a second program and is being used for execution of the first program, wherein said evacuation unit operates as part of the interruption processing to record the identification information and to evacuate the information stored in the area (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

7. Referring to claim 3, Gottlieb has taught a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising:

- a. Hardware resources divided into a plurality of areas, the hardware resources being used in common by the plurality of programs (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. An evacuation unit which records identification information identifying a first program, and evacuates information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution of the first program and a second area of said plurality of areas are necessary for execution of a second program and are being used for execution of the first program, said evacuation unit subsequently evacuating information stored in the second area when use of the second area becomes actually necessary for execution of the second program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. A restoration unit which restores the evacuated information to the area based on the identification information when the second program comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

8. Referring to claim 4, Gottlieb has taught a method of controlling a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising the steps of:

- a. Providing hardware resources divided into a plurality of areas, the hardware resources being used in common by the plurality of programs (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. Recording identification information identifying a first program, and evacuating information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution the first program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. Restoring the evacuated information to the area based on the identification information when the second programs comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

9. Referring to claim 5, Gottlieb has taught a method of controlling a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising the steps of:

- a. Providing hardware resources divided into a plurality of areas, the hardware resources being used in common by the plurality of programs (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. Recording identification information identifying a first program, and evacuating information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution the first program and are being used for execution of the first program, followed by subsequently evacuating information stored in the second area when use of the second area becomes actually necessary for execution of the second program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).  
In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. Restoring the evacuated information to the area based on the identification information when the second programs comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5,

line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

*Response to Arguments*

10. Applicant's arguments filed 16 February 2005 have been fully considered but they are not persuasive. Applicant argues in essence on pages 5-6

In the claimed invention and in contrast to Gottlieb, the hardware resources are used in common by a plurality of tasks, or programs, and are not dedicated to individual tasks as they are in Gottlieb.

11. This has not been found persuasive. Gottlieb teaches in column 4, lines 19-39 that the banked shadow register file stores the inactive threads, i.e. the inactive threads share the banked shadow register file, since they all use some portion of it. The standard register file is shared since, when a thread is active, then it uses the standard register file. For example, when thread A is active it uses the standard register file. When thread A becomes inactive, it is stored in the banked shadow register file, while thread B becomes active and uses the standard register file. Therefore the hardware resources are shared, since all the threads use all of the hardware resources.

*Conclusion*

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

13. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2183

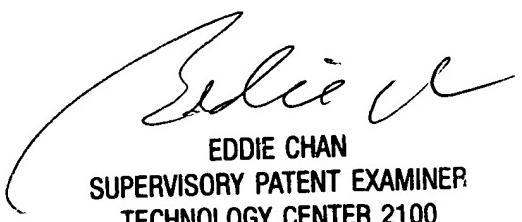
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J. Li whose telephone number is (571) 272-4169. The examiner can normally be reached on M-T 7:30am-5:00pm.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL  
Aimee J. Li  
12 May 2005



EDDIE CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100